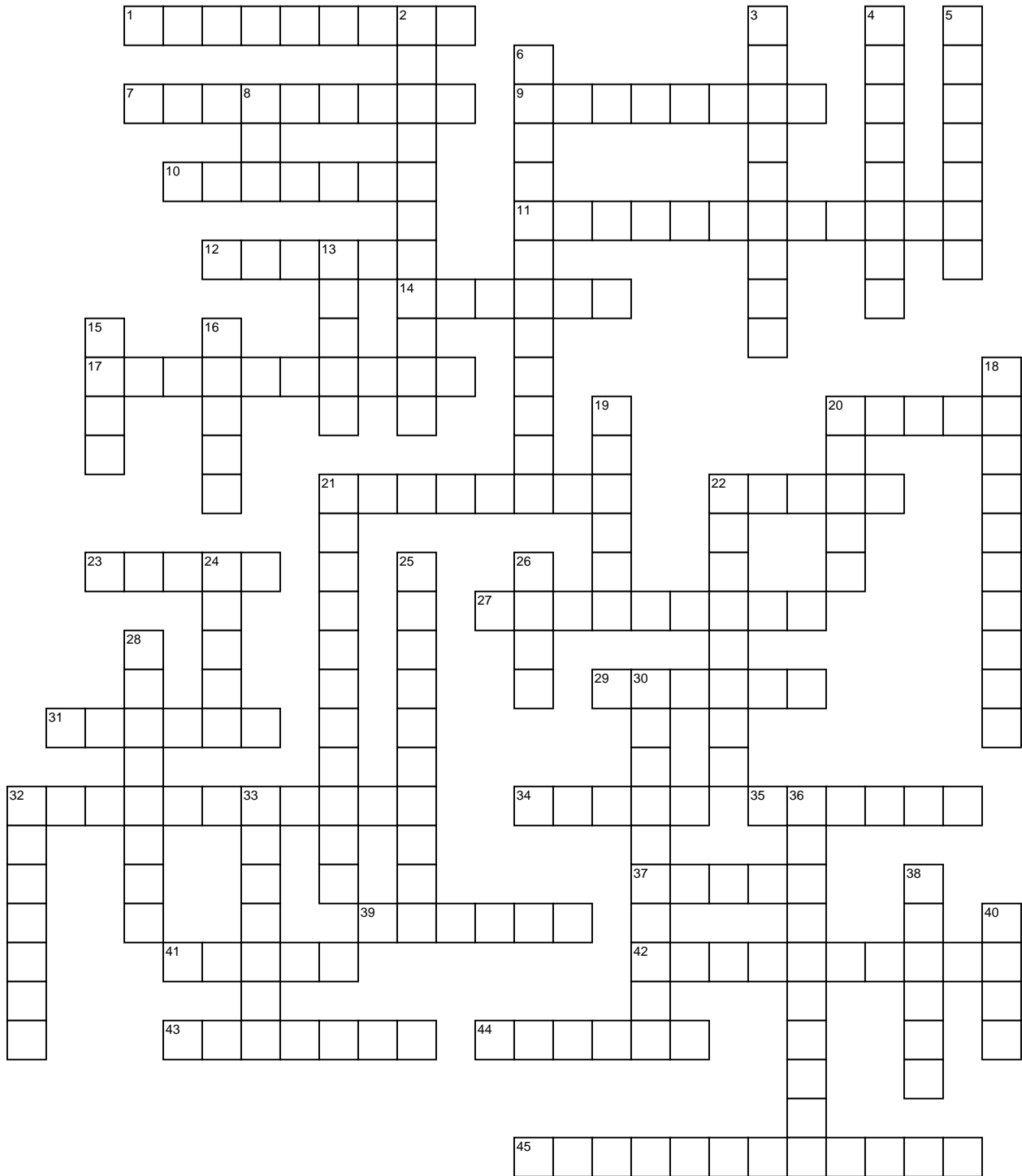


# Sound Crossword Puzzle



## ACROSS

- 1 An oscillation or back and forth wiggle.
- 7 One object vibrating at the same natural frequency of a second object causes that second object to vibrate. The objects are not touching.
- 9 The three bones of the middle ear. Hammer, anvil and stirrup (in Latin, Incus, malleus and stapes. They are connected to one another.
- 10 \_\_\_\_\_ frequency. The standard frequency at which an object vibrates when struck, plucked, bowed or blown into. The natural frequency of an object depends upon its density and its mass.
- 11 The general result when two waves overlap. It may be positive or negative.
- 12 The Greek letter that stands for wavelength
- 14 The bottom part of a wave.
- 17 The change in speed in a wave when it moves from one medium to another. This occurs in sound when it passes from one temperature air to another.
- 20 In \_\_\_\_\_. Occurs when two waves overlap, crest to crest
- 21 Semi \_\_\_\_\_. That part of the middle ear which governs balance. It consists of three fluid filled tubes at 90 degrees, 45 degrees and horizontal.
- 22 A wiggle in time and space
- 23 How high or low a sound is. It is represented by frequency.
- 27 The part of an orchestra which produces sound by a vibrating reed.
- 29 The material through which a wave travels. It determines the velocity of the wave.
- 31 \_\_\_\_\_ ear. That part of the ear that contains the three ossicles, the Eustachian tube and the semi-circular canals.
- 32 \_\_\_\_\_ interference. The overlapping of waves when they are out of phase to produce a quieter sound
- 34 A measurement of frequency in cycles per second.
- 35 \_\_\_\_\_ fork. A device which produces sound at a particular frequency. It consists of two tines or branches which vibrate back and forth when struck.
- 37 The top or highest point in a wave
- 39 The time it takes for one complete wave to pass a point. It is the inverse of frequency
- 41 A single disturbance that proceeds down a wave
- 42 Sounds that are below the threshold of human hearing of 20 Hz.
- 43 \_\_\_\_\_ wave. A pulse that moves through the crowd at sporting events
- 44 \_\_\_\_\_ instruments. That section of an orchestra which produces sound using stretched strings and/ or a bow
- 45 \_\_\_\_\_ interference. The overlapping of waves when they are in phase to produce a louder sound

## DOWN

- 2 A motion that repeats itself or a back and forth motion.
- 3 The number of cycles per second that a sound makes. It is the inverse of period and is heard as pitch.
- 4 \_\_\_\_\_ motion. Any repeating motion which occurs in cycles characterized by frequency, amplitude and period. Example: Sound, light, motion of a pendulum or a weight on a spring.
- 5 The unit of sound loudness. It is based on powers of ten.
- 6 \_\_\_\_\_ wave. A wave in which the individual particles of a medium move back and forth in the direction that the wave travels. Sound is an example.
- 8 \_\_\_\_\_ of Phase. The overlapping of two waves such that the crest of one is aligned with the trough of another.
- 13 Sounds produced when two waves of similar but slightly different frequency are played at the same time. Constructive and destructive interference occurs.
- 15 Ear \_\_\_\_\_. That part of the outer ear which occurs at the end of the ear canal.
- 16 \_\_\_\_\_ Section. That part of an orchestra which contains instruments which use a mouthpiece and a column of air to produce a sound.
- 18 \_\_\_\_\_ section. Instruments in an orchestra which produce sound by vibrating membranes.
- 19 \_\_\_\_\_ vibration. The vibrations in one object which are caused by the vibrations of another object when one is touching the other.
- 20 The outermost portion of the ear. It receives sound from the air.
- 21 That part of a sound wave in which the particles are close together
- 22 \_\_\_\_\_ wave. A wave which is produced when a wave is reflected back on itself. It appears to be standing still. It may be produced in either a string or a hollow tube as in an organ.
- 24 Ear \_\_\_\_\_. That part of the outer ear that leads to the ear drum.
- 25 \_\_\_\_\_ wave. A wave with vibrations at right angles to the direction in which the wave is travelling. Light is an example of a transverse wave.
- 26 That part of a standing wave where two waves overlap and there is no up and down motion.
- 28 \_\_\_\_\_ Nerve. The nerve which carries sound impulses from the cochlea to the brain.
- 30 \_\_\_\_\_ tube. A round tube which leads from the middle ear to the back of the throat. It allows pressure to be equalized on either side of the eardrum.
- 32 \_\_\_\_\_ Effect. The change in pitch heard when an object is emitting a sound and moving toward or away from the listener.
- 33 Snail shaped organ in the middle ear that is responsible for detecting the pitch of a particular sound.
- 36 Characterized as being above the range of human hearing of 20,000 Hz.
- 38 \_\_\_\_\_ Wave \_\_\_\_\_. The distance from the top of one wave to the top of another or the trough of one wave to the trough of the next wave. It is represented by the Greek letter Lambda
- 40 A reflection of sound